



Innovative Teaching – Learning Activities

Active & Experimental Learning

3D Model

Class: TE

Course: Electromagnetic Field Theory

Objective: To effectively grasp the concepts of spherical and cylindrical coordinate systems in electromagnetics, 3D models are used.

Outcomes:

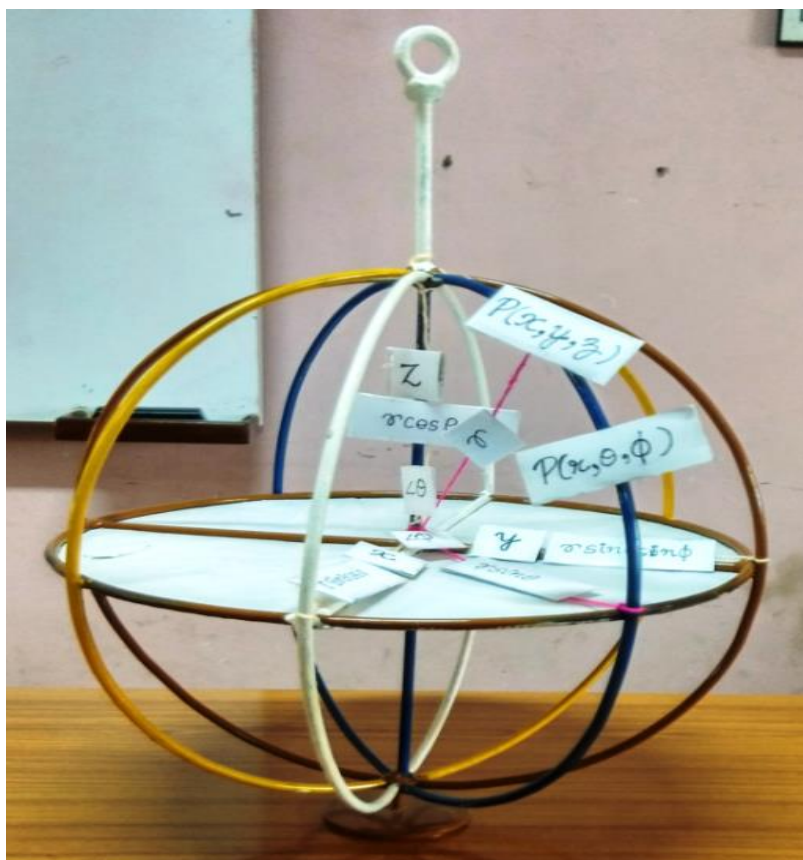
1. Enhanced Visualization
2. Simplified understanding of Complex Concepts
3. Increased Engagement and Motivation
4. Understand different coordinates, their limits, unit vectors and planes etc.

Photo for Activity:

These models are used during lectures of Electromagnetic Field Theory to explain concept of coordinate systems to students



3D Model of cylindrical Coordinate system



3D Model of Spherical Coordinate system

Impact of the activity:

1. Use of 3D models found effective in clarifying abstract concepts of cylindrical and spherical coordinate systems by visualizing locations of points.
2. Visualizing points helped students to solve derivations as well as problems like electric field intensity due to line charge, magnetic field intensity etc.
3. Activity found significant improvement in performance of the students in the university examination.
4. The percentage of students achieving scores above 60% increased from 11.69% to 17.7%.
5. The maximum marks obtained in the university examination is increased from 80 to 83.